

CLAIMS

1. A platen for use in a chemical mechanical planarization (CMP) system, comprising:

an inner set of pressure sub regions capable of providing pressure to a polishing
5 pad disposed above the platen, each inner pressure sub region being disposed below a
wafer and within a circumference of the wafer; and

an outer set of pressure sub regions capable of providing pressure to a polishing
pad disposed above the platen, each outer pressure sub region being disposed below the
wafer and outside the circumference of the wafer, the outer set of pressure sub regions
10 being further capable of shaping the polishing pad to achieve a particular removal rate.

2. A platen as recited in claim 1, wherein each sub region comprises a
plurality of output holes capable of facilitating pressure application to the polishing pad.

15 3. A platen as recited in claim 2, wherein each plurality of output holes
provides gas pressure to the polishing pad.

4. A platen as recited in claim 2, wherein each plurality of output holes
provides liquid pressure to the polishing pad.

5. A platen as recited in claim 2, wherein the outer set of sub regions includes a first outer sub region and a second outer sub region.

5 6. A platen as recited in claim 5, wherein the first outer sub region and the second outer sub region are controlled independently.

10 7. A platen as recited in claim 1, further comprising a leading zone and a trailing zone, each of the leading zone and the trailing zone including an inner set of pressure sub regions and an outer set of pressure sub regions.

15 8. A platen as recited in claim 7, wherein the outer set of sub regions of each of the leading zone and the trailing zone includes a first outer sub region and a second outer sub region.

9. A platen as recited in claim 8, wherein the first outer sub region and the second outer sub region are controlled independently.

10. A method for improved wafer planarization in a chemical mechanical planarization (CMP) process, comprising the operations of:

adjusting pressure to a polishing belt utilizing a platen having an inner set of pressure sub regions disposed below a wafer and within a circumference of the wafer; and

5 adjusting pressure to the polishing belt utilizing an outer set of pressure sub regions of the platen, the outer set of pressure sub regions being disposed below the wafer and outside the circumference of the wafer, the outer set of pressure sub regions being

further capable of shaping the polishing pad to achieve a particular removal rate.

10 11. A method as recited in claim 10, wherein the outer set of sub regions
includes a first outer sub region and a second outer sub region.

12. A method as recited in claim 11, further comprising the operation of independently adjusting the pressure provided by the first outer sub region and the second outer sub region.

13. A method as recited in claim 10, further comprising the operation of independently adjusting pressure provided in a leading zone and a trailing zone of the platen, each of the leading zone and the trailing zone including an inner set of pressure sub regions and an outer set of pressure sub regions.

14. A method as recited in claim 13, wherein the outer set of sub regions of each of the leading zone and the trailing zone includes a first outer sub region and a second outer sub region.

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15. A method as recited in claim 14, further comprising the operation of independently adjusting pressure provided by the first outer sub region and the second outer sub region.

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16. A system for chemical mechanical planarization (CMP), comprising:

a polishing belt;

a wafer carrier disposed above the polishing belt, the wafer carrier capable of applying a wafer to the polishing belt during a CMP process; and

a platen disposed below the polishing belt, the platen comprising:

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an inner set of pressure sub regions capable of providing pressure to the polishing pad, each inner pressure sub region being disposed below the wafer and within a circumference of the wafer; and

an outer set of pressure sub regions capable of providing pressure to the polishing pad, each outer pressure sub region being disposed below the wafer and

outside the circumference of the wafer, the outer set of pressure sub regions being further capable of shaping the polishing pad to achieve a particular removal rate.

17. A system as recited in claim 2, wherein the outer set of sub regions
5 includes a first outer sub region and a second outer sub region.

18. A system as recited in claim 17, wherein the first outer sub region and the
second outer sub region are controlled independently to shape the polishing pad during a
CMP process.

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19. A system as recited in claim 16, wherein the platen further includes a leading zone and a trailing zone, each of the leading zone and a trailing zone including an inner set of pressure sub regions and an outer set of pressure sub regions.

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20. A system as recited in claim 19, wherein the outer set of sub regions of each of the leading zone and a trailing zone includes a first outer sub region and a second outer sub region that are controlled independently.